

LINEAR SYSTEMS

Linear Integrated Systems

| FEATURES | |
|---|----------------|
| SECOND SOURCE FOR SILICONIX J500 SERIES | |
| WIDE CURRENT RANGE | 0.192 to 5.6mA |
| BIASING NOT REQUIRED | $V_{GS} = 0V$ |
| ABSOLUTE MAXIMUM RATINGS¹ | |
| @ 25 °C (unless otherwise stated) | |
| Maximum Temperatures | |
| Storage Temperature | -55 to 150°C |
| Junction Operating Temperature | -55 to 135°C |
| Maximum Power Dissipation | |
| Continuous Power Dissipation @125°C | 360mW |
| Maximum Currents | |
| Forward Current | 20mA |
| Reverse Current | 50mA |
| Maximum Voltages | |
| Peak Operating Voltage | $P_{OV} = 50V$ |

COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

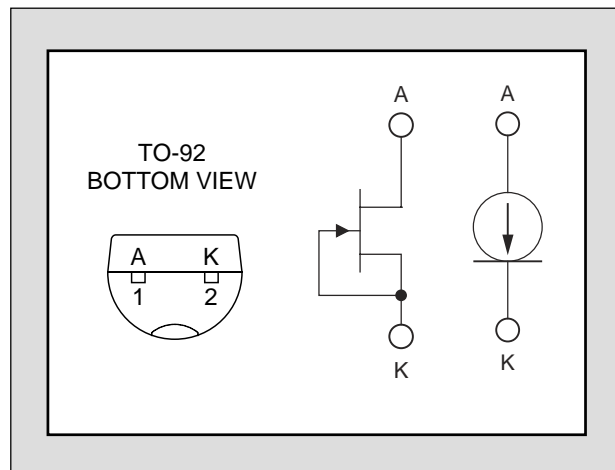
| SYMBOL | CHARACTERISTIC | MIN | TYP | MAX | UNITS | CONDITIONS |
|----------|-------------------------------------|-----|-----|-----|-------|-----------------------|
| P_{OV} | Peak Operating Voltage ² | 50 | | | V | $I_F = 1.1I_{F(max)}$ |
| V_R | Reverse Voltage | | 0.8 | | V | $I_R = 1mA$ |
| C_F | Forward Capacitance | | 2.2 | | pF | $V_F = 25V, f = 1MHz$ |

SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

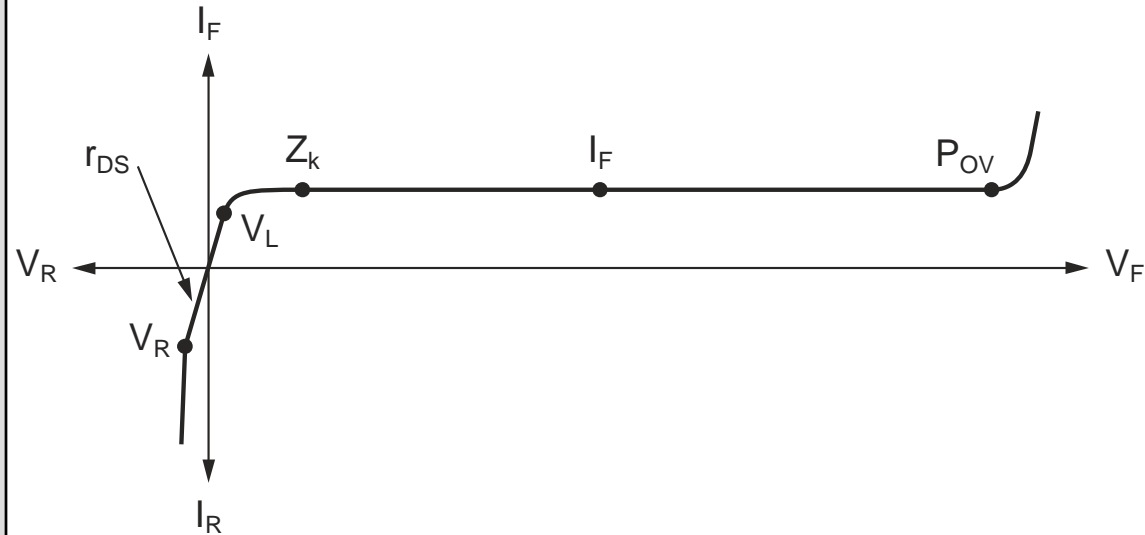
| PART | Forward Current ³ I_F | | | Dynamic Impedance ⁴ Z_d | | Knee Impedance Z_k | Limiting Voltage ⁵ V_L | |
|------|---------------------------------------|------|-------|---|-----|-------------------------|--|-----|
| | $V_F = 25V$ | | | $V_F = 25V$ | | $V_F = 6V$ | $I_F = 0.8I_{F(min)}$ | |
| | MIN | NOM | MAX | MIN | TYP | TYP | TYP | MAX |
| J500 | 0.192 | 0.24 | 0.288 | 4.00 | 15 | 2.50 | 1.2 | 0.4 |
| J501 | 0.264 | 0.33 | 0.396 | 2.20 | 10 | 1.60 | 1.3 | 0.5 |
| J502 | 0.344 | 0.43 | 0.516 | 1.50 | 7 | 1.10 | 1.5 | 0.6 |
| J503 | 0.448 | 0.56 | 0.672 | 1.20 | 5 | 0.80 | 1.7 | 0.7 |
| J504 | 0.600 | 0.75 | 0.900 | 0.80 | 3.5 | 0.55 | 1.9 | 0.8 |
| J505 | 0.800 | 1.00 | 1.200 | 0.50 | 2. | 0.40 | 2.1 | 0.9 |
| J506 | 1.120 | 1.40 | 1.680 | 0.33 | 1.5 | 0.25 | 2.5 | 1.1 |
| J507 | 1.440 | 1.80 | 2.160 | 0.20 | 1 | 0.19 | 2.8 | 1.3 |
| J508 | 1.900 | 2.40 | 2.900 | 0.20 | 0.7 | 0.13 | 3.1 | 1.5 |
| J509 | 2.400 | 3.00 | 3.600 | 0.15 | 0.5 | 0.09 | 3.5 | 1.7 |
| J510 | 2.900 | 3.60 | 4.300 | 0.15 | 0.4 | 0.07 | 3.9 | 1.9 |
| J511 | 3.800 | 4.70 | 5.600 | 0.12 | 0.3 | 0.05 | 4.2 | 2.1 |

J500 SERIES

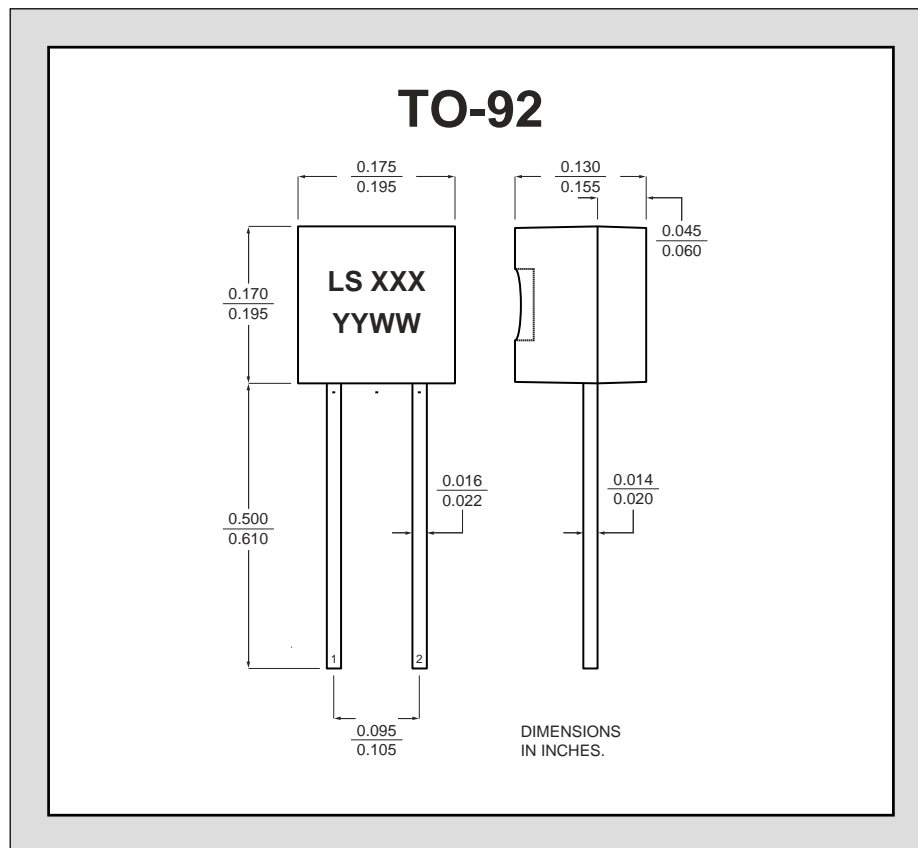
CURRENT REGULATING DIODES



V-I CHARACTERISTICS CURRENT REGULATING DIODE



PACKAGING DETAILS



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, $t = 2\text{ms}$. Maximum V_F where $I_F < 1.1I_{F(\text{max})}$.
3. Pulsed, $t = 2\text{ms}$. Continuous currents may vary.
4. Pulsed, $t = 2\text{ms}$. Continuous impedances may vary.
5. Min V_F required to ensure $I_F = 0.8I_{F(\text{min})}$.

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